Petra, Jordan

Local progress report on the implementation of the 10 Essentials for Making Cities Resilient (2013-2014)

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Essential 1

Put in place organization and coordination to understand and reduce disaster risk, based on participation of citizen groups and civil society. Build local alliances. Ensure that all departments understand their role to disaster risk reduction and preparedness.

How well are local organizations (including local government) equipped with capacities (knowledge, experience, official mandate) for disaster risk reduction and climate change adaptation?

Level of Progress achieved: 4

Description of Progress & Achievements:

Disaster Risk Reduction unit has been established in PDTRA, besides assigning DRRU official mandate. DRRU has conducted many workshops and training to raise the knowledge, experiences and capacities of the local governmental employees in this regard. An emergency plan was updated in cooperation with the Petra Governorate and other concerned parties in addition preparing a new response plan to deal with DRR and CCA.

To what extent do partnerships exist between communities, private sector and local authorities to reduce risk?

Level of Progress achieved: 3

Description of Progress & Achievements:

A partnerships were exist between local communities, private sector and local authorities to reduce risk at all levels including meeting to discuss the disaster risks that these parties are exposed to and how to find solutions to these risks besides the participation of the local communities and private sector during disasters in response to disaster and give hand to affected people, participation in recover, reconstruction.
Some of the private sector provides services to citizens affected by the disaster risk and put its equipment and its capabilities at the disposal of the local authorities to contribute to the risk mitigation and reconstruction and rehabilitation?

**How much does the local government support vulnerable local communities (particularly women, elderly, infirmed, children) to actively participate in risk reduction decision-making, policy making, planning and implementation processes?**

Level of Progress achieved: 4

**Description of Progress & Achievements:**

An approach has been implemented with the local communities called Petra Neighborhood Disaster Volunteers (PNDV), this approach has mobilized and encouraged people to volunteer to give help to their families, friends, and neighbors. 25 volunteers from both genders have trained in the basic essentials in fire fighting, rescue, searching and first aid, and then sat to training courses in how to deal with natural disasters that are threatening the area. One neighborhood has been chosen as a pilot neighborhood an equipped with a container contains the essentials tools and equipment that required to deal with disasters that may occur in this neighborhood as a first respondent.

**To what extent does the local government participate in the national DRR planning?**

Level of Progress achieved: 4

**Description of Progress & Achievements:**

PDTRA is an active member of the Emergency committee in Petra Region which headed by Governor. This committee is responsible for putting emergency and
response plans to reduce disaster risks, and to deal with disaster while it is happening.

Another issue, PDTRA has a Disaster Risk Reduction Unit, which participate with all parties in studies and plans made to DRR.

PDTRA also share its DRM and experience in planning to disaster with Ministry of interior and Higher council for Civil defense.
How far does the local government have access to adequate financial resources to carry out risk reduction activities?

Level of Progress achieved: 5

Description of Progress & Achievements:

PDTRA is a financial and administrative independence institution, which is characterized by an independent budget of more than 30 million JOD, which is allocated from the national government and from in addition to tickets revenue entering for the archaeological.

To what degree does the local government allocate sufficient financial resources to carry out DRR activities, including effective disaster response and recovery?

Level of Progress achieved: 5

Description of Progress & Achievements:

PDTRA allocates about 500,000 JOD for the DDRU for DRR activities such as, in addition to infrastructure projects, in which PDTRA allocated for more than 9 million JOD, such as bridges, rainwater drainage systems, retaining walls, and streets to protect the area, local communities, and properties, of the risk of flash floods, landslides and rock falls, on the one hand, and on the other hand, the Authority is annually implementing many projects to protect the archaeological site and visitors from the risk of flash floods and rock falls, in which, Authority allocates budget of up to five million dinars for such projects.
What is the scope of financial services (e.g. saving and credit schemes, macro and micro-insurance) available to vulnerable and marginalised households for pre-disaster times?

Level of Progress achieved: 4

Description of Progress & Achievements:

In terms of pre-disaster phase, PDTRA has implemented a wide varieties of projects to expected vulnerable places or householders such as retaining walls, rainwater drainage system to their houses and properties to protect them.

To what extent are micro finance, cash aid, soft loans, lone guarantees etc available to affected households after disasters to restart livelihoods?

Level of Progress achieved: 4

Description of Progress & Achievements:

PDTRA has given some vulnerable citizens in landslide areas rented houses to protect them. Cash aid was given to some affected households after disasters to restart livelihoods. PDTRA has provided a financial services for vulnerable citizen who suffered from disaster risk to rehabilitate their houses or private properties.

How well established are economic incentives for investing in disaster risk reduction for households and businesses (e.g. reduced insurance premiums for households, tax holidays for businesses)?
Level of Progress achieved: 4

Description of Progress & Achievements:

The authority provides facilities to companies that operate, particularly with regard to projects to reduce the risk of disasters such as the abolition demurrage in case of emergency, and the financial contribution at the time of emergency and things beyond the scope of responsibility of the company.
Example: Authority has paid the costs of repairing the sewer line and water in some areas of the region that have been damaged during the work of the company, which contributed to encourage the company to complete the work properly.

To what extent do local business associations, such as chambers of commerce and similar, support efforts of small enterprises for business continuity during and after disasters?

Level of Progress achieved: 4

Description of Progress & Achievements:

Support by PDTRA to community Association "the capital of the Nabataeans" to carry out cleaning caves and valleys and flood streams in Petra Archaeological Park (PAP) to reduce the risk of flash floods and thus reduce the risk of disasters.
Support provided by PDTRA to other associations who works in water harvesting to protect some private properties and agricultural properties.
Support to Gas station and Gas distributors, bakeries agencies to deliver these essential to local communities and hotels, ...etc
Essential 3

Maintain up-to-date data on hazards and vulnerabilities, prepare risk assessments and use these as the basis for urban development plans and decisions. Ensure that this information and the plans for your city's resilience are readily available to the public and fully discussed with them.

To what degree does the local government conducted thorough disaster risk assessments for key vulnerable development sectors in your local authority?

Level of Progress achieved: 5

Description of Progress & Achievements:

PDTRA has conducted a feasibility study via the DRRU to identify the main hazard that Petra region is exposed to, and the study came up with the four main hazards which are: earthquake, flash flood, falling rocks, and landslides. After this identification for main disasters, PDTRA hired company to assess the risks of previous mentioned hazards and in an integrated study called "Integrated Risk Assessment" IRA. At the end of 2013 and after conducting the IRA, all deliverables were submitted to Petra, which were GIS maps, reports, assessment results, ...etc.

To what extent are these risk assessments regularly updated, e.g. annually or on a bi-annual basis?

Level of Progress achieved: 4

Description of Progress & Achievements:

Risk assessment will be regularly updated and upon any new circumstances, because it is not one-off process. The assessment will follow the cycle of risk identification, risk analysis, risk assessment, risk management, and risk communication.
Maps, and assessment reports that have been delivered by IRA study showed all vulnerable place, exposure levels, and floodplains, multi-scenarios for earthquakes and floods occurrence show the possible damage and number of fatalities for each scenario. 
In Petra, usually, this assessment is been held after every storm or rain seasonal in terms of floods, and annually for earthquakes or after any event.

How regularly does the local government communicate to the community, information on local hazard trends and risk reduction measures (e.g. using a Risk Communications Plan) including early warnings of likely hazard impact?

Level of Progress achieved: 4

Description of Progress & Achievements:

Local government (PDTRA) has a regular communication with local community in terms of information on local hazards trends and risk reduction measures such as early warning system.

All information on services available and expected actions before, during and after a disaster event - such as contingency and evacuation plans, shelter location, financial support, health services etc. - that are made available on a regular basis and in an appropriate format and language for the respective communities, all these are available to locals besides the participation of the local community to feedback PDTRA for any updated risks that may occur or newly appeared. 
After setting up the Early Warning System (EWS) in Petra and implemented the risk communication became more active.

How well are local government risk assessments linked to, and supportive of, risk assessments from neighbouring local authorities and state or provincial government risk management plans?

Level of Progress achieved: 4

Description of Progress & Achievements:
There is a national plan for disaster management in the capital, Amman, in addition to plans for each region or province independent, depending on the nature of the region and the risks they face.

Areas adjacent to Petra (such as the city of Ma’an, Shoubak) linked with joint plans and coordination to carry out disaster reduction, before, during and after the disaster. Another issue, Jordan as a country now implementing a plan to carry out risk analysis for the whole country in which all hazards for all cities and regions will be identified, analysed, assessed, and then update the national disaster risk management accordingly.

**How well are disaster risk assessments incorporated into all relevant local development planning on a consistent basis?**

Level of Progress achieved: 4

**Description of Progress & Achievements:**

After the launching of the master strategic plan (SMP) for PDTRA which featured some of the risks assessments in the region, in this basis, PDTRA started updated and developing a land use planning for all area of region,

And as receiving the IRA study, which contributed to providing appropriate tools to decision makers with respect to the sensitive land use planning.
Essential 4

Invest in and maintain critical infrastructure that reduces risk, such as flood drainage, adjusted where needed to cope with climate change.

How far do land use policies and planning regulations for housing and development infrastructure take current and projected disaster risk (including climate related risks) into account?

Level of Progress achieved: 4

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<tbody>
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<td>Housing</td>
<td>Yes</td>
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<td>Communication</td>
<td>No</td>
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<td>Transportation</td>
<td>Yes</td>
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<td>Energy</td>
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Description of Progress & Achievements:

Regarding housing, PDTRA provides advice and guidance to citizens and companies when building houses, schools and the like, also PDTRA has regulations and instructions for building which comply with the national building codes and regulations, besides the special regulations and building for the areas assigned as vulnerable to risk in terms of fundamentals and earthquake resistance, and building retaining walls to protect the land from erosion and protect homes and roads of the risk of collapses and landslides.

How adequately are critical public facilities and infrastructure located in high risk areas assessed for all hazard risks and safety?

Level of Progress achieved: 3

Description of Progress & Achievements:
When annually reviewing the work plans and programs, taking into account the state of the defects in the public facilities and basic sense of buildings to address these flaws, but without inclusive of all public facilities.

Also, when any if these public facilities and infrastructure located in high risk areas, exposed to any risk, or there is possibility to expose to risk, these facilities are been assessed and take preventive and mitigation measures to reduce disasters riskd that may occur in these areas.

How adequate are the measures that are being undertaken to protect critical public facilities and infrastructure from damage during disasters?

Level of Progress achieved: 5

Description of Progress & Achievements:

The PDTRA implements retaining walls, rain water channels, culverts, bridges and gabions and terraces, dams, agroforestry and the necessary precautions to protect public facilities and basic infrastructure such as schools, hospitals and public markets and main roads.
To what extent have local schools, hospitals and health facilities received special attention for "all hazard" risk assessments in your local authority?

Level of Progress achieved: 4

<table>
<thead>
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Description of Progress & Achievements:

Seismic risk reduction is required both in the construction of new buildings and infrastructure as well as in the existing building stocks, which is also known as the built environment. Given the fact that millions of buildings have been built in the country, which are old and do not comply with seismic safety standards, it is critical that structures of such buildings are assessed to estimate their vulnerability against potential earthquake events. Based upon such assessments, the most vulnerable buildings must be either retrofitted or re-built in order to avoid major life and property losses during an earthquake event. In order to encourage the owners of buildings to undertake necessary safety steps, it is imperative to update the Building Code and its risk map with latest earthquake provisions and the findings of the existing seismic risk assessments in Amman and Aqaba.

An expertise through with Italian company with much experiences from the local government, contractors and Universities have been combined and updated building codes and assessed some schools in Jordan.

Thus, recommendations were proposed to make structural assessment for seismic risks, and seismic proof retrofitting of buildings and essential requirement under the national building code. This modification was led by the Jordan National Building Council chaired by the Minister of Public Works with the technical knowledge from Italian experts, Royal Scientific Society, Jordan Engineering Association, Earthquake Technical Committee and Jordan Constructor Contractor Association and universities.
How safe are all main schools, hospitals and health facilities from disasters so that they have the ability to remain operational during emergencies?

Level of Progress achieved: 4

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Description of Progress & Achievements:

As the schools and hospitals assessment was conducted, the reports show that the queen Rania hospital and Petra Comprehensive Health Center, Taybeh and Rajef health Centers, are all safe from disasters and it has the ability to remain operational during emergencies.

Regarding Schools, the assessment was held for one school, and the report has indicated some weaknesses in building structure but it is classified it it would be safe from disasters and it has the ability to remain operational during emergencies. for the other schools, most of them are recently build or rented by ministry of education, and they are safe as well

To what degree do local government or other levels of government have special programs in place to regularly assess schools, hospitals and health facilities for maintenance, compliance with building codes, general safety, weather-related risks etc.?

Level of Progress achieved: 4

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Description of Progress & Achievements:
This issue is done periodically by Ministry of education and ministry if health, whereas, PDTRA doesn't have the authority to do the assessment for these facilities, but PDTRA has implemented many maintenance project for some schools in the region, besides apply the building codes for all new buildings.

How far are regular disaster preparedness drills undertaken in schools, hospitals and health facilities?

Level of Progress achieved: 4

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Description of Progress & Achievements:

A regular regular disaster preparedness drills undertaken in schools, hospitals and health facilities every year, and sometimes these activities are undertaken twice a year.
Apply and enforce realistic, risk compliant building regulations and land use planning principles. Identify safe land for low-income citizens and develop upgrading of informal settlements, wherever feasible.

How well are risk-sensitive land use regulations and building codes, health and safety codes enforced across all development zones and building types?

Level of Progress achieved: 4

Description of Progress & Achievements:

PDTRA has rules and regulations for the sensitive land use showing hazardous areas which may affect the health and safety standards of public, and is warning citizens and private business people to these risks and construction standards and building codes there.

The other issue, when apply rules and regulations, each property is being studied as a single case, every single requirement is demanded such as rainwater drainage system, retaining walls, ..etc.

How strong are existing regulations (e.g. land use plans, building codes etc) to support disaster risk reduction in your local authority?

Level of Progress achieved: 4

Description of Progress & Achievements:

The land use plans have been declared to public and zoning also applied, areas and lands were classified as hazardous area, areas for living, investment, industry, ..etc. Therefore, as these regulations being enforced, they would be a strong and support DRR
**Essential 7**

*Ensure education programmes & training on disaster risk reduction are in place in schools and communities.*

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**How regularly does the local government conduct awareness-building or education programs on DRR and disaster preparedness for local communities?**

Level of Progress achieved: 4

- Programs include cultural diversity issues: Yes
- Programs are sensitive to gender perspectives: Yes

Description of Progress & Achievements:

PDTRA has many programs in this regards in cooperation with Civil Defense in the region in which it conducted awareness building and education programs. In the year 2013, PDTRA has conducted a comprehensive awareness plan to schools, local communities and public employees in DRR and disaster preparedness.

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**To what extent does the local government provide training in risk reduction for local officials and community leaders?**

Level of Progress achieved: 4

Description of Progress & Achievements:

In 2012 and 2013, 2014 more than 8 workshops were conducted in this regard and local officials and community leaders were invited to these workshops, in addition to informing them of everything that has been done regarding the disaster risk reduction studies and other measures.
To what degree do local schools and colleges include courses, education or training in disaster risk reduction (including climate related risks) as part of the education curriculum?

Level of Progress achieved: 4

Description of Progress & Achievements:

In second semester 2012/2013 disaster risk reduction education will be included in the schools, colleges curriculum, specially, the civil engineering students in Universities, a curriculum was being designed and will be taught in the semester 2014/2015. In addition, a very simple curriculum was designed for schools students and 44 teacher were sat to training in how to deliver the student curriculum, then more than 9000 students in Petra were taught in how to deal with disasters and to transfer the knowledge to his family.

How aware are citizens of evacuation plans or drills for evacuations when necessary?

Level of Progress achieved: 4

Description of Progress & Achievements:

Citizens do have a good contact with local governments in terms of disasters and how to deal or act when disaster occur. Also the community leader such as tribes leader are aware for the evacuation plans or drills for evacuations when necessary, then they transfer this knowledge or news to their tribes or communities.
Essential 8

Protect ecosystems and natural buffers to mitigate floods, storm surges and other hazards to which your city may be vulnerable. Adapt to climate change by building on good risk reduction practices.

How well integrated are local government DRR policies, strategies and implementation plans with existing environmental development and natural resource management plans?

Level of Progress achieved: 4

Description of Progress & Achievements:

PDTRA has constructed several small dams and terraces to protect the valleys, agriculture and natural resources therein, in addition to the use of these dams to harvest water and therefore use water for watering some trees and plants, as well as planting trees to protect areas with high slopes from erosion.

PDTRA also constructed retaining walls and rainfall drainage channels to protect the valleys from abroad.

To what degree does the local government support the restoration, protection and sustainable management of ecosystems services?

Level of Progress achieved: 4

<table>
<thead>
<tr>
<th>Ecosystems</th>
<th>Support</th>
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<tbody>
<tr>
<td>Forests</td>
<td>Yes</td>
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<tr>
<td>Coastal zones</td>
<td>No</td>
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<tr>
<td>Wetlands</td>
<td>No</td>
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<tr>
<td>Water resources</td>
<td>Yes</td>
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</table>
Description of Progress & Achievements:

PDTRA supports the restoration, protection and sustainable management of ecosystems services such as forests and water resources; where PDTRA has conducted a study to forest and native trees in the region and established a nursery for the production of these trees from extinction and which serve as buffers against natural hazards and reduce significantly the impact of weather-related disasters.

Meanwhile water resources, PDTRA has protected the water springs and rehabilitated these springs in the region and did regular check-ups to ensure its validity for drinking purposes or watering animals. And will also work in the future to rehabilitate five water springs to be a tributary of drinking water in the region.

How much do civil society organizations and citizens participate in the restoration, protection and sustainable management of ecosystems services?

Level of Progress achieved: 3

Description of Progress & Achievements:

Participation from the civil society organizations and citizens in the restoration, protection and sustainable management of ecosystems services seems to be good, as they have their agricultural fields and they plant some trees to help in protection ecosystems, besides the construction of small terraces to help in soil erosion prevention.

How much does the private sector participate in the implementation of environmental and ecosystems management plans in your local authority?
Level of Progress achieved: 4

Description of Progress & Achievements:

The participation from the private sector in the implementation of environmental and ecosystems management plans in our local authority (PDTRA) could be very good, because they are a part of these plans, and very important factor of their successful.
To what degree do local institutions have access to financial reserves to support effective disaster response and early recovery?

Level of Progress achieved: 4

Description of Progress & Achievements:

PDTRA allocates budget for emergencies which is accessible by the Board of Commissioners or PDTRA directorates whom are concern with disasters, and allocated to the activities of response and early recovery of disasters such as the provision of water, gas and electricity and primary materials needed for the citizens, provide alternative methods, and ports.

To what extent are early warning centres established, adequately staffed (or on-call personnel) and well resourced (power back ups, equipment redundancy etc) at all times?

Level of Progress achieved: 5

Description of Progress & Achievements:

PDTRA has finished setting up through the DRRU the early warning system (EWS) for flash flood in the region. This EWS is now working giving the alarms when the rainfall in one or more of 8 stations exceeded the limits that may cause the flood.
participation?

Level of Progress achieved: 4

Description of Progress & Achievements:

EWS will be able to send warning by sms, voice alarms, emails, message on internet, or message in the public screens to local communities, visitors, etc. Local communities are keen to participate in this system and get benefit from it.

To what extent does the local government have an emergency operations centre (EOC) and/or an emergency communication system?

Level of Progress achieved: 5

Description of Progress & Achievements:

PDTRA has its own EOC equipped with necessary equipment, communication instruments. In addition, PDTRA has recently set up a monitoring system by livecam which monitors most of places in Petra and archaeological site, and different areas in the region.

How regularly are training drills and rehearsal carried out with the participation of relevant government, non-governmental, local leaders and volunteers?

Level of Progress achieved: 4

Description of Progress & Achievements:
Up to now there are lots of training drills in the local government, such as Civil Defense, health sector, schools, who carry out an annual training drills with participation of relevant government, non-governmental, local leaders, not volunteers at the current time, besides the volunteers and participation from their side in training drills.

**How available are key resources for effective response, such as emergency supplies, emergency shelters, identified evacuation routes and contingency plans at all times?**

Level of Progress achieved: 4

<table>
<thead>
<tr>
<th>Stockpiles of relief supplies</th>
<th>Yes</th>
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<tr>
<td>Emergency shelters</td>
<td>Yes</td>
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<td>Safe evacuation routes identified</td>
<td>Yes</td>
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<tr>
<td>Contingency plan or community disaster preparedness plan for all major hazards</td>
<td>Yes</td>
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**Description of Progress & Achievements:**

Local government is assigning the resources for effective response such as emergency supplies (gas, food, drinking water), emergency shelters, save evacuation routes that is identified in the contingency plan. Contingency plan or community disaster preparedness plan for all major hazards has been put by contribution of PDTRA, Petra Governornate, Petra Civil Defense, Petra Public Security, Petra Public Works directorate. In this plan, evacuation plan was determined, in addition to evacuation places, shelters, backup plans, ...etc
After any disaster, ensure that the needs of the survivors are placed at the centre of reconstruction with support for them and their community organizations to design and help implement responses, including rebuilding homes and livelihoods.

How much access does the local government have to resources and expertise to assist victims of psycho-social (psychological, emotional) impacts of disasters?

Level of Progress achieved: 4

Description of Progress & Achievements:

In the hospital of Queen Rania there is a specialized department to assist the victims of psycho-social (psychological, emotional) impacts of disasters. Hospital has the required expertise in this regard and connected with the local governor who could transfer any cases that may require such treatment.

How well are disaster risk reduction measures integrated into post-disaster recovery and rehabilitation activities (i.e. build back better, livelihoods rehabilitation)?

Level of Progress achieved: 3

Description of Progress & Achievements:

Disaster risk reduction measures are integrated into post-disaster recovery and rehabilitation activities (i.e. build back better, livelihoods rehabilitation) the response plan are prepared to deal with disaster when it occurs, and how to move from response to recovery and then to preparedness.
To what degree does the Contingency Plan (or similar plan) include an outline strategy for post disaster recovery and reconstruction, including needs assessments and livelihoods rehabilitation?

Level of Progress achieved: 4

Description of Progress & Achievements:

The contingency plan, after it was recently updated, includes an outline strategy for post-disaster recovery and reconstruction in which PDTRA has given the role of reconstruction, and assessments and livelihoods rehabilitation. An assessment to affected house, people, and their properties, is conducted by PDTRA and rehabilitation of the livelihood for affected people is maintained.